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CENTRAL INTELLIGENCE GROUP
INTELLIGENCE REPORT

COUNTRY China

DATE: 25X1A

INFO. [REDACTED]

SUBJECT Economic Information: Fushun Shale Oil Plant,
Manchuria

DIST. 27 June 1947

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PAGES 2

ORIGIN [REDACTED]
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SUPPLEMENT

ATTACHMENT 2 pages of photos

Present Condition

1. There are three complete shale oil plants in Fushun: the old section of the West Plant, the new section of the West Plant, and the East Plant.
 - a. The East Plant is the newest and best of the three and normally has the highest production capacity: 60 distillation retorts of 200 ton capacity each per day. According to the Paulay Report, one ton of oil equals about seven barrels. The plant, however, was about 30% disabled by the Soviets and Chinese Communists and is consequently inoperable at present. It is not expected to become useful for some time, as small machinery, conveyor belts, and conveyor belt rollers have been removed or destroyed and are not now available in China.
 - b. The new and modern section of the West Plant, which contains 60 retorts of a 150 ton capacity each per day, is also inoperable because it lacks small motors, conveyor belts, and conveyor belt rollers.
 - c. The old section of the West Plant, with 80 retorts of 100 ton capacity each per day, has a lower production capacity than either of the other plants, although it has more retorts. It is kept in operation largely by cannibalization of parts from the two other plants, and while it is entirely operable, only one battery of 20 retorts is now in use because this one battery can process all the available shale.

Present Activity

2. The Fushun Shale Oil Plant is now producing 50 tons of crude oil and 7 to 9 tons of ammonium sulphate per day. The crude oil is stored in two 10,000 ton tanks, while the ammonium sulphate is packed in grass-mat bags and shipped to various parts of Manchuria for use as fertilizer.
3. Only one of the four ammonium sulphate condensing and crystallizing units at this plant is in operation. When the shale is distilled, a gas containing vaporized crude oil and ammonia is produced, in addition to crude oil. After

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the gas has been cooled to remove the vaporized crude oil, the remaining ammonia-bearing gas is then treated with sulphuric acid to produce the ammonium sulphate. The sulphuric acid needed for this process is also produced at the plant, 60 tons per day by the contact process and 500 tons per month by the chamber process. The latter process is considerably hindered by the lack of pyrites, from Japan. The plant's stock pile is the chief source at present. The sulphuric acid is produced according to the needs of the ammonium sulphate plant, and no excess is made for commercial purposes.

4. Part of the slag resulting from the distillation of the shale is used as a base for cement for repair work around the plant. The rest is shipped back to the coal mines to fill in underground diggings.
5. The cracking unit and some of the boilers are being overhauled at present. The putting into operation of the cracking unit will mean that the plant will be capable of turning out as finished products (in addition to ammonium sulphate) gasoline (60% of crude oil), coke, machine oil, Diesel oil, and paraffin.

Difficulties

6. Lack of shale is the main operational difficulty at the Fushun Shale Oil Plant. Only 250 tons of shale per day reach this plant, partly because transportation facilities from the open pit mines to the plant are inadequate and partly because the mines themselves are hampered in production by a lack of foundation and supporting timbers and sufficient excavating machinery. The shale oil plant has difficulty in keeping up a proper steam pressure with the very old Japanese boilers now in use, but the most immediate need is 50 more dump cars and two or three more locomotives. (Electric rather than steam locomotives are used for this purpose.)
7. Following is the key to the attached photographs: (all of West Plant, old section)

Page 1

- A. Crushing and screening unit, looking south
- B. Retorts, looking south
- C. Cracking unit, looking south
- D. Steam boiler unit, looking south
- E. Crude oil condensing tower; F. Ammonia and sulphuric acid contact tower, looking north
- G. Ammonium sulphate condensing and crystallizing unit; H. Ammonium sulphate warehouse, looking north
- I. Unit for final condensing of crude oil from ammonia-bearing gas, looking north
- J. Storage tanks for crude oil, looking north
- K. Storage tanks for gasoline, looking north
- L. Dividing line between old and new sections; M. Main entrance

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1. Shale crushing and screening unit, showing compressed air rock breaker
2. Active retorts, looking west
3. Pipes leading from retorts to crude oil condensing tower
4. Crude oil condensing tower
5. Tower where ammonia is treated with sulphuric acid to make ammonium sulphate, looking south
6. Cracking tower, looking north
7. Shale screening unit
8. Pipes leading from condensing tower to vat from which crude oil is pumped to storage tank
9. Ammonium sulphate dryer
10. Cracking unit, looking east

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